

REMARKS

Claims 1-13 are all the claims presently pending in the application. Claims 1 and 2 are amended to more particularly define the invention. Claims 3-13 are added to claim additional features of the invention. No new matter is added.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1 and 2 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite.

With respect to the prior art, claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Itoh et al. (U.S. Patent Publication No. 2003/0101772 A1).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g. as recited in claim 1) is directed to a method of manufacturing porous glass base material for optical fiber, including flame-hydrolyzing raw materials in an oxyhydrogen flame to generate glass fine particles, using a burner to deposit the glass fine particles on a rotating target to form the porous glass base material, the burner being moved relatively to the rotating target, adjusting an amount of hydrogen and oxygen supplied to the burner during the using of the burner such that a temperature difference (Ta-Tb) between a surface temperature of the porous glass base material when touching a flame of the burner (Ta) and a surface temperature of the porous glass base

material prior to touching the flame of the burner (Tb) is within a range from 200 °C to 700 °C, and dehydrating and sintering the porous glass base material to transform the porous glass base material into clear glass.

The porous glass base materials made by conventional methods were found to have significant drawbacks. For the purpose of improving the deposition efficiency, an excessive cooling makes a large surface temperature difference between the outer layer and the inner layer in the porous glass base materials. This causes a difference between the contraction ratio of the outer layer and the inner layer, which may cause cracks to form on the surface of the glass base material. (Application at page 3, lines 19-25).

On the other hand, an exemplary aspect of the claimed invention may include a method of manufacturing porous glass base material for optical fiber, including adjusting an amount of hydrogen and oxygen supplied to the burner during the using of the burner such that a temperature difference (Ta-Tb) between a surface temperature of the porous glass base material when touching a flame of the burner (Ta) and a surface temperature of the porous glass base material prior to touching the flame of the burner (Tb) is within a range from 200 °C to 700 °C. (Application at page 4, line 33 to page 5, line 3). This exemplary feature may provide a method of manufacturing porous glass base material for optical fiber in which cracking of the surface of the porous glass base material is prevented and a glass particle deposition rate is improved. (Application at page 5, lines 3-4).

II. THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTIONS

The Examiner alleges that claim 1 is “narrative and indefinite, failing to conform with U.S. practice.” The Examiner also alleges that claim 1 has several limitations which lack sufficient antecedent basis. (Office Action at page 2, point 3). However, Applicant respectfully

submits that claim 1 is amended to alleviate the Examiner's concerns. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections.

III. THE PRIOR ART REJECTION – The Itoh Reference

Itoh discloses a manufacturing method for an optical fiber preform. (Itoh at Abstract). The Examiner alleges that Itoh anticipates the claimed invention. However, Applicant respectfully submits that Itoh fails to teach each and every element of the claimed invention.

Specifically, Itoh clearly fails to teach or suggest a method of manufacturing porous glass base material for optical fiber, “comprising . . . adjusting an amount of hydrogen and oxygen supplied to said burner during said using said burner such that a temperature difference ($T_a - T_b$) between a surface temperature of said porous glass base material when touching a flame of said burner (T_a) and a surface temperature of said porous glass base material prior to touching said flame of said burner (T_b) is within a range from 200 °C to 700 °C”, as recited, for example, in claim 1 (Application at page 4, line 33 to page 5, line 3). As previously mentioned, this exemplary feature may provide a method of manufacturing porous glass base material for optical fiber in which cracking of the surface of the porous glass base material is prevented and a glass particle deposition rate is improved. (Application at page 5, lines 3-4).

The Examiner alleges that the exemplary feature is taught by Itoh at paragraphs [0022] and [0027]-[0029]. (Office Action at page 4, lines 2-8). However, Itoh clearly fails to teach or suggest a method of manufacturing porous glass base material for optical fiber, including adjusting an amount of hydrogen and oxygen supplied to the burner during the using of the burner such that a temperature difference ($T_a - T_b$) between a surface temperature of the porous glass base material when touching a flame of the burner (T_a) and a surface temperature of the porous glass base material prior to touching the flame of the burner (T_b) is within a range from

200 °C to 700 °C. Indeed, Itoh fails to teach or suggest that adjusting an amount of hydrogen and oxygen supplied to the burner during the using of the burner provides the claimed temperature difference range.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

IV. NEW CLAIMS

New claims 3-13 are added to claim additional features of the invention and to provide more varied protection for the claimed invention. These claims are independently patentable because of the novel and nonobvious features recited therein.

Applicant submits that the new claims are patentable over the cited prior art references at least for analogous reasons to those set forth above.

V. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-13, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Serial No.: 10/583,971
Docket No.: SH-0064PCTUS

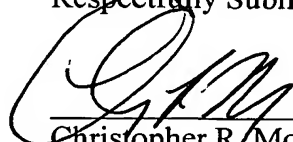
(RYU.025)

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Date:

September 23, 2009

Respectfully Submitted,



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